shielding material. For example, a transparent resin material may also be used instead. In this case, the incidence of a reflected light beam or a scattered light beam on the image sensing area can be prevented by the light shielding film formed on the side surface region of the optical member. In this structure, the exposed portion of the transparent bonding member for bonding the optical member is not shielded from a light beam so that there is the possibility of the incidence of a scattered light beam from the exposed portion on the image sensing area. However, since the thickness of the transparent bonding member is extremely small, there is substantially no influence in most cases.

Embodiment 2

[0093] FIG. **7** is a cross-sectional view showing a structure of a semiconductor image sensing element **40** according to the second embodiment of the present invention. FIGS. **8**A to **8**C are cross-sectional views illustrating the main process steps of a method for fabricating the semiconductor image sensing element **40**. FIG. **9** is a cross-sectional view showing a structure of a semiconductor image sensing device **45** constructed by using the semiconductor image sensing element **40**. Referring to these drawings, the semiconductor image sensing element **40** and the semiconductor image sensing device **45** according to the present embodiment and fabrication methods therefor will be described herein below.

[0094] In the same manner as in the first embodiment, an optical member **41** is bonded over the plurality of semiconductor elements **11** formed on the semiconductor wafer and then a light shielding member **42** is further formed. Since the semiconductor element **11** is the same as in the first embodiment, the description thereof will be omitted.

[0095] As shown in FIG. **7**, the optical member **41** according to the present embodiment is bonded over the micro-lenses **16** of the semiconductor element **11**. However, the present embodiment has not formed a light shielding film, a light shielding pattern, or the like on the side surface region of the optical member **41**. As the material of the optical member **41** and the material of the transparent bonding member **20**, the same materials as used in the first embodiment can be used so that the description thereof will be omitted.

[0096] On the side surface region of the optical member **41** and on the exposed region of the transparent bonding member **20**, the light shielding member **42** has been formed by coating or the like. The light shielding member **42** is made of a resin containing a dye or particle which cuts off at least a visible light beam. The light shielding member **42** is formed by using, e.g., a liquid epoxy resin, acrylic resin, polyimide resin, or the like containing particles of carbon or the like or a black dye, coating the resin on the side surface region of the optical member **41**, and then curing it.

[0097] After the light shielding member **42** is formed, the semiconductor wafer is cut by dicing in the same manner as in the first embodiment so that the separate individual semiconductor image sensing elements **40** are obtained.

[0098] In the arrangement, the side surface region of the optical member **41**, the exposed region of the transparent bonding member **20**, and a part of the peripheral circuit region **14** of each of the semiconductor elements **11** or the peripheral circuit region **14** except for the electrode portions **15** can be covered with the light shielding member **41**. This can prevent the incidence of a reflected light beam or a scattered light beam on the image sensing area **13** from the side surface region of the optical member **41** or from the exposed region of the transparent bonding member **20** and can prevent optical noise such as flare or smear.

[0099] FIG. **8**A to **8**C are cross-sectional views illustrating the main process steps of fabricating the semiconductor image sensing element **40** according to the present embodiment. Although the bonding of the optical member **41**, the coating of the light shielding member **42**, and the like are performed with respect to the semiconductor elements **11** in the state of a semiconductor wafer, FIGS. **8**A to **8**C show the fabrication process which is performed over one of the semiconductor elements **11**. In the fabrication method according to the present embodiment also, the optical member **41** and the light shielding member **42** can be formed for only the semiconductor elements **11** that have been determined to be acceptable in an image test and an electric property test.

[0100] First, as shown in FIG. **8**A, the optical member is bonded over the micro-lenses **16** on the image sensing area **13** of the semiconductor element **11** by using the transparent bonding member **20**. The thickness of the optical member **41** may also be adjusted to the same as that of the optical member **18** according to the first embodiment.

[0101] Next, as shown in FIG. **8**B, a liquid resin used to form the light shielding member **42**, e.g., an epoxy resin is ejected from a dispenser such that the light shielding member **42** is coated to cover the side surface region of the optical member **41**, the exposed region of the transparent bonding member **20**, a part of the peripheral circuit region **14** of the semiconductor element **11** or the peripheral circuit region **14** except for the electrode portions **15**. Preferably, the light shielding member **42** is coated so as not to seep over to the upper surface of the optical member **41**. By forming the optical member **41** into a configuration which extensively covers a part of the peripheral circuit region **14**, it is possible to prevent the light shielding member **42** from being coated over the upper surface to a position corresponding to the image sensing area **13** even when the light shielding member **42** has partly seeped over to the upper surface of the optical member **41**. Accordingly, the coating step can be simplified.

[0102] After the liquid resin used to form the light shielding member **42** is coated, it is heated and cured to form the light shielding member **42**. The amount of seeping can be reduced by using a material containing a UV setting resin and coating the material by using a dispenser, while simultaneously irradiating the ejected material with a UV light beam. In this case also, the coated material may be heated and cured appropriately. In this manner, the semiconductor image sensing elements **40** in each of which the optical member **41** is bonded over the semiconductor element **11** and the light shielding member **42** is formed therearound are fabricated on the semiconductor wafer. Then, the semiconductor wafer is cut along the specified dicing lanes such that the separate individual semiconductor image sensing elements **40** are obtained.

[0103] Such a fabrication method allows the prevention of optical noise to the pixels of the semiconductor image sensing elements **40** by merely coating and forming the light shielding member **42** on the side surface region of the optical